

CLAIMS

What is claimed is:

1. A deployment mechanism having at least one aerodynamic fin, comprising a tubular cam including a retention mechanism mountable in a projectile for deploying the at least one fin from a stowed orientation to a deployed orientation that is different from the stowed orientation.
2. A deployment mechanism as set forth in claim 1, wherein the retention mechanism includes a retention slot.
3. A deployment mechanism as set forth in claim 2, wherein the retention slot is "L" shaped.
4. A deployment mechanism as set forth in claim 2, wherein the retention slot includes a stop,
the stop partially retains a connecting portion of the at least one aerodynamic fin.
5. A deployment mechanism as set forth in claim 1, wherein the tubular cam includes a worm gear formed in a sidewall of the tubular cam and the worm gear is used to rotate the tubular cam.
6. A deployment mechanism as set forth in claim 5, wherein the worm gear completely circumscribes the tubular cam.
7. A deployment mechanism as set forth in claim 5, wherein the worm gear partially circumscribes the tubular cam.
8. A deployment mechanism as set forth in claim 1, wherein the tubular cam includes at least one cam slot; and a cam pin connected to the at

least one fin and extending into the at least one cam slot; a spring is connected to the cam pin to urge the cam pin to a deployed configuration in which the at least one fin is in the deployed orientation, and the cam pin is movable along and guided by the at least one cam slot to pivot the at least one fin and to rotate the at least one fin from the stowed orientation to the deployed orientation.

9. A deployment mechanism as set forth in claim 8, wherein the cam pin is rotatable relative to a drive pin that interconnects the cam pin and the spring.

10. A deployment mechanism as set forth in claim 9, wherein the drive pin includes a portion having an abrupt increase in diameter against which the spring acts.

11. A deployment mechanism as set forth in claim 8, wherein the cam pin is rotatable relative to the spring that interconnects the cam pin and a pivot pin.

12. A deployment mechanism as set forth in claim 8, wherein the tubular cam has an upper face that forms a fulcrum about which the at least one fin pivots.

13. A deployment mechanism as set forth in claim 8, wherein the at least one cam slot includes and end with a horizontal component for receiving the cam pin when the tubular cam is over rotated to engage the retention mechanism.

14. A guided projectile comprising at least one aerodynamic fin; and a deployment mechanism including a tubular cam including a retention mechanism for deploying the at least one fin from a stowed orientation to a deployed orientation that is different from the stowed orientation.

15. A guided projectile as set forth in claim 14, wherein the deployment mechanism pivots and rotates the at least one fin into the deployed orientation.

16. A guided projectile as set forth in claim 14, wherein the tubular cam includes at least one cam slot; and a cam pin connected to the at least one fin and extending into the at least one cam slot; a spring is connected to the cam pin to urge the cam pin to a deployed configuration that includes the at least one fin in the deployed orientation, and the cam pin is guided by the at least one cam slot to simultaneously pivot the at least one fin and rotate the at least one fin into the deployed orientation.

17. A guided projectile as set forth in claim 14, wherein the guided projectile has a generally cylindrical surface and a recess in the surface sized to receive the at least one fin in the stowed orientation.

18. A guided projectile as set forth in claim 14, wherein the retention mechanism includes a retention slot.

19. A guided projectile as set forth in claim 16, wherein the guided projectile has an actuator to receive the deployment mechanism therein and to rotate the at least one fin in the deployed orientation by rotating the tubular cam.

20. A guided projectile as set forth in claim 19, wherein the actuator includes a worm drive.